Errata for
The Feynman Lectures on Physics Volume III
New Millennium Edition (6th printing)

The errors in this list appear in *The Feynman Lectures on Physics: New Millennium Edition* and earlier editions; errors validated by Caltech will be corrected in future printings of the *New Millennium Edition* or in future editions.

Errors are listed in the order of their appearance in the book. Each listing consists of the errant text followed by a brief description of the error, followed by corrected text.

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Global changes:

capitalization of proper names

gaussian -> Gaussian
cartesian -> Cartesian
D'Alembertian -> d'Alembertian

spelling corrections

worth while -> worthwhile

III:4-8, par 3

... the coefficients of absorption of induced emission and of spontaneous emission are all equal.

Missing commas (2 occurrences).

... the coefficients of absorption, of induced emission, and of spontaneous emission are all equal.

III:10-11, par 4

The result is that the energy difference is much larger—about 1.5 eV, which is the energy of an ultraviolet photon.

The energy of an ultraviolet photon is between 3 and 124 eV. When Feynman said "energy difference" he originally indicated A, the difference between E_0 and the energies of each of the states, $|I\rangle$ with energy E_0+A, and $|II\rangle$ with energy E_0-A; however the text was edited to indicate the difference in energy between the two states, and that difference is $2A$.

The result is that the energy difference is much larger—about 3 eV, which is the energy of an ultraviolet photon.

III:13-7, par 2

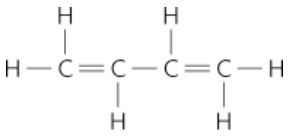
Don't forget that m_{eff} has nothing to do with the real mass of an electron. It may be quite different—although in real crystals it often happens to turn out to be the same general order of magnitude, about 2 to 20 times the free-space mass of the electron.

Feynman never said this. It was added by Matt Sands, and it is unclear what is meant by a "real" crystal. The effective mass of an electron in commonly used conductors and semiconductors circa 1964 ranged from about .1 in semiconductors to about 30 in metals. [Sources: *Principles of Semiconductor Devices, B. Van Zeghbroeck,* 2011, Table 2.3.2 and *Principles of Electronic Materials and Devices, Second Edition, S.O. Casap,* 2002, Table 4.2]

Don't forget that m_{eff} has nothing to do with the real mass of an electron. It may be quite different—although in commonly used metals and semiconductors it often happens to turn out to be the same general order of magnitude, about 0.1 to 30 times the free-space mass of the electron.

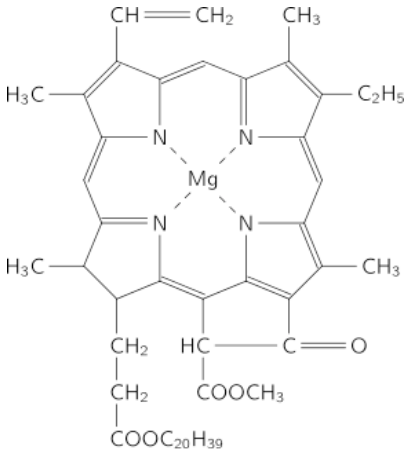
III:15-10, Fig 15-9

Errors in the chemical labeling were introduced when the figure was drafted for the book. It should look like the figure below.



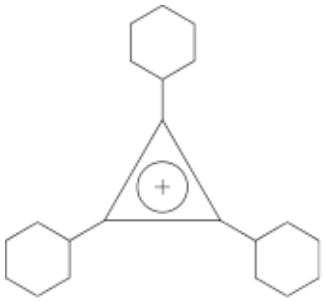
III:15-11, Fig 15-12 and caption

Feynman's original figure was of a 'chloryphyll a' molecule, but there were some errors in the chemical labeling and bond structure and more errors were added when the figure was drafted for the book. It should look like the figure below. The caption has been changed from "A chlorphyll molecule" to "A 'chlorphyl a' molecule" to better match Feynman's original.



III:15-12, Fig 15-16 and caption

There is a typo in the caption: cyclopropanyl (with an 'a') should be cyclopropenyl (with an 'e'), as per the body text. This cation is so-named because there is something like a double bond, and for the same reason one should draw a circle around the 'plus' sign in the center.



III:21-2, par 3

To show that this is true I'd like to illustrate by a simple example in which instead of having a continuous situation we have a line of atoms along the *x*-axis with the spacing *b* and we have an amplitude $-K$ for an electron to jump from one atom to another when there is no field. [Footnote: K is the same quantity that was called *A* in the problem of a linear lattice with no magnetic field. See Chapter 13.]

Description of 'K' is inaccurate and inconsistent with description of 'A' in chapters 13 and 16.

To show that this is true I'd like to illustrate by a simple example in which instead of having a continuous situation we have a line of atoms along the *x*-axis with the spacing *b* and we have an amplitude $iK/\hbar$ per unit time for an electron to jump from one atom to another when there is no field. [Footnote: K is the same quantity that was called *A* in the problem of a linear lattice with no magnetic field. See Chapter 13.]

III:21-3, par 2

If you then set $E_0 = -2K$, and put back $f(x) = (q/\hbar)A_x$, you can easily check that Eq. (21.6) is the same as the first part of Eq. (21.3).

Wrong sign.

If you then set $E_0 = 2K$, and put back $f(x) = (q/\hbar)A_x$, you can easily check that Eq. (21.6) is the same as the first part of Eq. (21.3).